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|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------|
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| <b>Subject:</b> | Application Serial No.: 10/678,715<br>Filed: October 3, 2003<br>Applicant: William C. Kimbrell, Jr.<br>Title: CHEMICAL MODIFICATION<br>OF HYDROLIZABLE POLYMER-<br>CONTAINING TEXTILE ARTICLES<br>Attorney Docket: 2992B |                      |                                    |
| <b>Date:</b>    | May 30, 2006                                                                                                                                                                                                             |                      |                                    |
| <b>Copies:</b>  | <b>Pages:</b>                                                                                                                                                                                                            | 19 (including cover) |                                    |

**Comments:**

Transmittal Sheet- 1 page

Appeal Brief-18 pages

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Case No. 2992B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: William C. Kimbrell, Jr.  
Serial Number: 10/678,715  
Filed: October 3, 2003  
For: **CHEMICAL MODIFICATION OF HYDROLIZABLE POLYMER-  
CONTAINING TEXTILE ARTICLES**  
Group Art Unit: 1751  
Examiner: Kumar, Preeti

**BRIEF ON APPEAL UNDER 37 CFR 1.192**

Commissioner for Patents  
PO Box 1450  
Alexandria, Virginia 22313-1450

CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 C.F.R. § 1.6(d)  
I hereby certify that this correspondence is being transmitted by facsimile to Commissioner for  
Patents, P.O. Box 1450, Alexandria, VA 22313-1450, at (571) 273-8300.  
Date: May 29, 2006  
Signature: Melody Towary  
Name: Melody Towary

Sir:

The following Appeal Brief is submitted pursuant to the Notice of Appeal filed on or about March 29, 2006, from the Final Office Action dated November 29, 2005.

**I. REAL PARTY IN INTEREST**

The above-referenced application is the subject of an assignment to Milliken & Company, located at 920 Milliken Road, Spartanburg, South Carolina, which is the real party in interest.

**II. RELATED APPEALS & INTERFERENCES**

An Appeal Brief (dated May 25, 2006) was filed for Patent Application Serial Number 10/679,238.

**III. STATUS OF CLAIMS**

Claims 44, 47 – 54, 60, 63 – 70, 76 and 79 – 86 have been rejected and are the subject of this Appeal.

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**IV. STATUS OF AMENDMENTS**

Amendments were made after the Final Office Action. The amendments were entered.

**V. SUMMARY OF INVENTION**

The subject application is directed to a process for chemically modifying textile articles which contain hydrolizable polymers to reducing pilling tendency.

Claim 44 is directed to a process for chemically modifying a hydrolizable polymer-containing textile article to improve resistance to pilling by (a) applying an effective amount of a branched chain amine to the surface of the article, wherein the branched chain amine is selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines and wherein the amine contains between 8 and 14 carbon atoms; (b) heating the article; and (c) optionally, dyeing the article. The features of claim 44 are described, for example, in the specification on page 1 (lines 6-7), page 6 (lines 19-22), page 10 (lines 4-11) page 11 (lines 10-27), page 12 (lines 1-26), page 13 (lines 1-7), and Example 2.

Claim 47 is directed to the process described in claim 44 wherein the amine is a polyamine. The features of claim 47 are described, for example, in the specification on page 10 (lines 4-8).

Claim 48 is directed to the process described in claim 44 wherein the amine is a diamine. The features of claim 48 are described, for example, in the specification on page 10 (lines 4-8).

Claim 49 is directed to the process described in claim 44 wherein the alkyl amine is selected from the group consisting of Isodecyloxypropyl-1,3-diaminopropane, Isododecyloxypropyl-1,3-diaminopropane and Isotridecyloxypropyl-1,3-diaminopropane. The features of claim 49 are described, for example, in the specification on page 10 (lines 8-9).

Claim 50 is directed to the process described in claim 44 wherein the amount of amine is between about 0.05 and about 5.0 weight percent on weight of the article. The features of claim 50 are described, for example, in the specification on page 11 (lines 10-14).

Claim 51 is directed to the process described in claim 44 wherein the amount of amine is between about 0.1 and about 1.0 weight percent on weight of the article. The features of claim 51 are described, for example, in the specification on page 10 (lines 10-14).

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Claim 52 is directed to the process described in claim 44 wherein the amount of amine is between about 0.2 and about 0.7 weight percent on weight of the article. The features of claim 52 are described, for example, in the specification on page 10 (lines 10-15).

Claim 53 is directed to the process described in claim 44 wherein the amine is applied uniformly to the surface of the article. The features of claim 53 are described, for example, in the specification on page 12 (lines 6-8).

Claim 54 is directed to the product made by the process described in claim 44. The features of claim 54 are described, for example, in the specification on page 8 (lines 1-2), page 11 (lines 24-27), page 12 (lines 1-16), and Example 2.

Claim 60 is directed to a process for chemically modifying a hydrolizable polymer-containing textile article to improve resistance to pilling by (a) applying an effective amount of a branched chain amine to the surface of the article, wherein the branched chain amine is selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines and wherein the amine contains between 8 and 14 carbon atoms; (b) heating the article to a temperature of between about 200 and 300 degrees F; (c) maintaining the temperature from between about 5 and 60 minutes; (d) cooling the article to a temperature of between about 120 and 180 degrees F; (e) rinsing the article with water and an acidic solution; and (f) optionally, dyeing the article. The features of claim 60 are described, for example, in the specification on page 1 (lines 6-7), page 6 (lines 19-22), page 10 (lines 4-11) and page 11 (lines 10-27), page 12 (lines 1-26), page 13 (lines 1-7), and Example 2.

Claim 63 is directed to the process described in claim 60 wherein the amine is a polyamine. The features of claim 63 are described, for example, in the specification on page 10 (lines 4-8).

Claim 64 is directed to the process described in claim 60 wherein the amine is a diamine. The features of claim 64 are described, for example, in the specification on page 10 (lines 4-8).

Claim 65 is directed to the process described in claim 60 wherein the alkyl amine is selected from the group consisting of Isodecyloxypropyl-1,3-diaminopropane, Isododecyloxypropyl-1,3-

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diaminopropane and Isotridecyloxypropyl-1,3-diaminopropane. The features of claim 65 are described, for example, in the specification on page 10 (lines 8-9).

Claim 66 is directed to the process described in claim 60 wherein the amount of amine is between about 0.05 and about 5.0 weight percent on weight of the article. The features of claim 66 are described, for example, in the specification on page 11 (lines 10-14).

Claim 67 is directed to the process described in claim 60 wherein the amount of amine is between about 0.1 and about 1.0 weight percent on weight of the article. The features of claim 67 are described, for example, in the specification on page 11 (lines 10-14).

Claim 68 is directed to the process described in claim 60 wherein the amount of amine is between about 0.2 and about 0.7 weight percent on weight of the article. The features of claim 68 are described, for example, in the specification on page 11 (lines 10-15).

Claim 69 is directed to the process described in claim 60 wherein the amine is applied uniformly to the surface of the article. The features of claim 69 are described, for example, in the specification on page 12 (lines 6-8).

Claim 70 is directed to the product made by the process described in claim 60. The features of claim 70 are described, for example, in the specification on page 8 (lines 1-2), page 11 (lines 24-27), page 12 (lines 1-16) and Example 2.

Claim 76 is directed to a process for chemically modifying a hydrolyzable polymer-containing textile article to improve resistance to pilling by (a) applying an effective amount of a branched chain amine to the surface of the article, wherein the branched chain amine is selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines and wherein the amine contains between 8 and 14 carbon atoms; (b) heating the article to a temperature of between about 200 and 425 degrees F; (c) maintaining the temperature from between about 1 and 60 minutes; (d) optionally, rinsing the article with water; and (e) optionally, dyeing the article. The features of claim 76 are described, for example, in the specification on page 1 (lines 6-7), page 6 (lines 19-22), page 10 (lines 4-11) and page 11 (lines 10-27), page 12 (lines 1-26), page 13 (lines 1-7), and Example 2.

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Claim 79 is directed to the process described in claim 76 wherein the amine is a polyamine. The features of claim 79 are described, for example, in the specification on page 10 (lines 4-8).

Claim 80 is directed to the process described in claim 76 wherein the amine is a diamine. The features of claim 80 are described, for example, in the specification on page 10 (lines 4-8).

Claim 81 is directed to the process described in claim 76 wherein the alkyl amine is selected from the group consisting of Isodecyloxypropyl-1,3-diaminopropane, Isododecyloxypropyl-1,3-diaminopropane and Isotridecyloxypropyl-1,3-diaminopropane. The features of claim 81 are described, for example, in the specification on page 10 (lines 8-9).

Claim 82 is directed to the process described in claim 76 wherein the amount of amine is between about 0.05 and about 5.0 weight percent on weight of the article. The features of claim 82 are described, for example, in the specification on page 11 (lines 10-14).

Claim 83 is directed to the process described in claim 76 wherein the amount of amine is between about 0.1 and about 1.0 weight percent on weight of the article. The features of claim 83 are described, for example, in the specification on page 11 (lines 10-14).

Claim 84 is directed to the process described in claim 76 wherein the amount of amine is between about 0.2 and about 0.7 weight percent on weight of the article. The features of claim 84 are described, for example, in the specification on page 11 (lines 10-15).

Claim 85 is directed to the process described in claim 76 wherein the amine is applied uniformly to the surface of the article. The features of claim 85 are described, for example, in the specification on page 12 (lines 6-8).

Claim 86 is directed to the product made by the process described in claim 76. The features of claim 86 are described, for example, in the specification on page 8 (lines 1-2), page 11 (lines 24-27), page 12 (lines 1-16) and Example 2.

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**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 44, 47 – 54, 60, 63 – 70, 76 and 79 – 86 stand rejected under 35 USC 103(a) as being unpatentable over Farmer (US Patent No. 4,103,051) in view of Krogh et al. (US Patent No. 6,169,064).

**VII. ARGUMENT**

Claims 44, 47 – 54, 60, 63 – 70, 76 and 79 – 86 stand rejected under 35 USC 103(a) as being unpatentable over Farmer (US Patent No. 4,103,051) in view of Krogh et al. (US Patent No. 6,169,064).

Office Arguments (see Office Action dated 6/15/05)

The Office submits that Farmer teaches treating polyester fibers with a polymeric composition comprising an aliphatic amine having at least 10 carbon atoms, the concentration of the amine being between about 0.5% and 10% based on the dry weight of the textile for use in the reduction of the pilling tendency of textiles (Abstract).

Specifically regarding the claimed amine, the Office contends that Farmer teaches that the aliphatic amine advantageously contains between about 10 and 25 carbon atoms and preferably between about 12 and 21 carbon atoms. Fatty amines are preferred, particularly diamines. The amine generally is dissolved or suspended in water or an organic solvent prior to the treatment of the textile. The proportion of the amine based on the dry weight of the textile is between about 0.5% and 10% and preferably between about 1% and 5%. In order to provide the before mentioned amount of amine on the textile, the treating admixture will generally contain from about 0.01 to about 20 weight percent of the amine. The textile may be treated with the amine utilizing conventional application techniques such as padding, dipping, spraying, etc. Also, exhaustion techniques may be employed such as by adding the amine to a dye bath in a dyeing cycle.

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Specifically regarding the claimed heating and cooling and rinsing, in example II, the Office submits that Farmer teaches the use of propanediamine to treat 100% polyester yarn. See col. 3. Farmer further teaches that it is advantageous that the treatment be performed at a temperature between about 200 degrees and 400 degrees F for a period between about 1 and 60 minutes. Other chemicals may be applied to the textile simultaneously or sequentially of the amine. For example, chemicals may be employed which enhance the physical characteristics of the textile such as durable press reactants, e.g., textile resins or vinyl monomers with dual functionality and catalysts therefore, as well as soil release polymers, hand builders, softeners, emulsifying or wetting agents and the like. See col. 2, lines 20-25. In table I in column 3, Farmer demonstrates several 1,3 propanediamines and n-dodecylamines under standardized pilling tests of the compounds on fabric samples resulted in having no pilling.

The Office notes that Farmer does not teach applying branched chain amine selected from the group consisting of isodecyloxypropyl-1,3-diaminopropane, isododecyloxypropyl-1,3-diaminopropane and isotridecyloxypropyl-1,3-diaminopropane as recited by the instant claims.

With regard to the second reference, the Office submits that Krogh et al. teach surfactant compositions wherein the surfactant is robust and capable of imparting surfactant properties to a wide range of compositions. Suitable ether amine or diamine precursors for use in the surfactant include, without limitation, PA-7 (isopropyl-oxypropyl amine), PA-10 (isohexyloxypropyl amine), PA-1214 (a blended octyl/decyloxypropyl amine), PA-14 (decyloxypropyl amine), PA-17 (isotridecyloxypropyl amine) and DA-17 (isotridecyloxypropyl-1,3 diamino propane). See col .4, lines 25-35.

The Office further submits that in example 9 Krogh et al. teach a laundry detergent wherein the surfactant is heated to form a blend of amine ether acid salt surfactant and alkanolamide. This blend has a synergistic cleaning effect useful in removing soils from fabric. The surfactant has excellent liquidity. The liquidity is imparted by the ether linkages on the acids and, where applicable, on the amines. The potential for branching of the alkyl groups on the acids and amines further contributes to the excellent liquidity of the surfactant. See example 9, col. 11,ln.40-col.12 where Krogh et al. illustrate that amine ether acid salts, and alkanolamides formed after heating the salts, form a synergistic detergent blend which is effective in removing soil from fabric.

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Specifically, Krogh et al. teach that the surfactant was prepared by first treating monoethanolamine with sodium borohydride at 70°C for one hour. This solution was added to an equimolar amount of isodecyloxypropionic acid over a period of 15 minutes. The amine ether acid mixture was then heated to 155°C for approximately 1.5 hours. The end products of this reaction are approximately 38% monoethanolamine isodecyloxypropionic acid salt surfactant and 62% alkanolamide. Different surfactant/alkanolamide ratios result from different heating durations. For example, a 60% monoethanolamine isodecyloxypropionic acid salt surfactant and 40% alkanolamide blend composition results from heating the surfactant for approximately 30 minutes, while a 10% monoethanolamine isodecyloxypropionic acid salt surfactant and 90% alkanolamide composition blend results from heating the composition approximately 4 hours. Five detergent compositions were prepared using 96.6% water and 0.40% of the monoethanolamine isodecyloxypropionic acid salt surfactant/alkanolamide blend. Krogh et al. teach that over 45% of the soil was removed by the detergent composition including 38% monoethanolamine isodecyloxypropionic acid salt surfactant and 62% alkanolamide. The optimal exemplary detergent composition was found to be an efficacious laundry detergent.

The Office believes that it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the diaminopropane taught by Farmer, to arrive at a process for using the recited branch chain amine, because Krogh et al. teach that the isodecyloxypropylamine surfactant prepared from ether amine or diamine precursors including (isopropyl-oxypropyl amine), (isohexyloxypropyl amine), (decyloxypropyl amine), (isotridecyloxypropyl amine) and (isotridecyloxypropyl-1,3 diamino propane) results in a superior surfactant that is an efficacious laundry detergent with favorable liquidity and dispersion properties. See example 9 and col.2, lines 30-40.

Furthermore, one of ordinary skill in the art would have been motivated to combine the teachings of Krogh et al. with that of Farmer since Farmer teaches a process for chemically modifying a hydrolizable polymer-containing textile article to improve resistance to pilling by applying a diaminopropane in general.

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Appellants Arguments

To establish *prima facie* obviousness of a claimed invention, there must be a reasonable expectation of success in making the Office's proposed modification or combination (MPEP § 2143.02). Case law states that "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Appellants respectfully submit that there is no reasonable expectation of success that one of ordinary skill in the art would combine the Farmer and Krogh references and obtain a process for chemically modifying a hydrolyzable polymer-containing textile article to improve resistance to pilling wherein said process utilizes a branched chain amine applied to the surface of the article, wherein the branched chain amine is selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines and wherein the amine contains between 8 and 14 carbon atoms, as recited in the independent claims (claims 44, 60 and 76).

It has been established previously that Farmer discloses a polymeric composition comprising aliphatic amines that are unbranched carbon chains (see Office Action dated 6/15/05, page 2). Krogh et al. teach an ether acid salt surfactant composition. The amine constituent of the surfactant may be selected from two types of amines: (a) ether amines, which may be branched and (b) fatty amines. See Abstract and col. 3, lines 41-48. Krogh et al. teach that the composition may be utilized in a laundry detergent composition (col. 11, lines 42-48).

With regard to the teachings of amines by Krogh et al., the fatty amines are similar to those taught by the Farmer reference (col. 3, lines 49-56). It has already been established that these amines differ greatly from those disclosed by the instant invention. The ether amines, on the other hand, may include isotridecyloxypropyl-1,3 diaminopropane (col. 4, lines 26-35). However, Appellants respectfully contend that since the Krogh et al. fail to provide any teaching as to the preference of one group of amines over the other, it is unclear to Appellants how one of ordinary skill in the art would be motivated to choose an ether amine over a fatty amine, since Krogh et al. teach both, and since Krogh et al. fail to offer any suggestion or motivation for choosing one group over the other.

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As further support for this argument, in looking to the Examples provided by the Krogh reference, the single example which may be considered to be textile related does not even utilize an ether amine in the formulation. Rather, Example 9 utilizes monoalkanolamide, which is a fatty amine, in the laundry detergent formulation (see also col. 4, lines 36-47). How then would one of ordinary skill in the art be led to choose a branched ether amine and react it with the surface of a polymer-containing textile substrate to obtain a substituted hydrolyzable polymer wherein the substitute is a branched chain amine? Appellants respectfully submit that such motivation and expectation of success is not provide by the combination of references.

Example 6, which is also cited by the Office in support of its argument, is directed to a composition for use as a roof coating surfactant. See, for example, Krogh et al. at column 5, lines 50-52 where it states, "Specific examples of suitable amine ether acid salt surfactants for use in the roof coating surfactant are identified in each of the following Examples 1 – 6."

Furthermore, even if one were able, without undue experimentation, to choose an ether amine rather than a fatty amine from the teachings of Krogh et al., it is unclear how one would combine the amine with the teachings of Farmer to obtain a process for chemically modifying a hydrolyzable polymer-containing textile article to achieve improved resistance to pilling wherein said process utilizes a branched chain amine, since Farmer also teaches the use of fatty, unbranched amines. To the contrary, Appellants respectfully submit that it is more likely that by combining the Farmer and Krogh references, as suggested by the Office, one of ordinary skill in the art would be led to choose a fatty amine, since that is one consistent element taught by both references.

Thus, Appellants respectfully contend that the teachings of Krogh et al. in combination with Farmer do not lead one of ordinary skill in the art to provide a process for chemically modifying a hydrolyzable polymer-containing textile article to improve resistance to pilling wherein said process utilizes a branched chain amine selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines, and wherein the branched chain amine contains between 8 and 14 carbon atoms, as currently claimed by Appellants.

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Accordingly, Appellants respectfully submit that this rejection lacks a *prima facie* showing of obviousness, since there is no reasonable expectation of success in making the Office's proposed modification or combination as required by MPEP § 2143.02 and as set forth in case law.

Reversal of this rejection is earnestly requested.

## CONCLUSION

For the reasons set forth above, Appellants respectfully urge that the obviousness rejection of Claims 44, 47 – 54, 60, 63 – 70, 76 and 79 – 86 is improper. Reversal of these rejections in this Appeal is hereby requested.

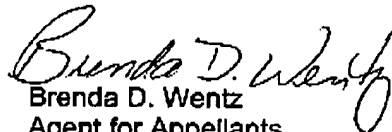
A copy of pending Claims 44, 47 – 54, 60, 63 – 70, 76 and 79 – 86 is attached as an Appendix hereto.

The Commissioner is hereby authorized to charge the Appeal Brief fee of \$500.00 to Deposit Account No. 04-0500. The Commissioner is also authorized to charge any additional fees that may be required, or credit any over-payment, to Deposit Account No. 04-0500.

Respectfully submitted,

May 26, 2006

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**VIII. CLAIMS APPENDIX**

## Claims 1-43 (Cancelled)

44. A process for chemically modifying a hydrolizable polymer-containing textile article to improve resistance to pilling by:
- (a) Applying an effective amount of a branched chain amine to the surface of the article, wherein the branched chain amine is selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines, and wherein the amine contains between 8 and 14 carbon atoms;
  - (b) Heating the article; and
  - (c) Optionally, dyeing the article.

## Claims 45 and 46 (Cancelled)

47. The process of claim 44, wherein the amine is a polyamine.
48. The process of claim 44, wherein the amine is a diamine.
49. The process of claim 44, wherein the alkyl amine is selected from the group consisting of Isodecyloxypropyl-1, 3-diaminopropane, Isododecyloxypropyl-1,3-diaminopropane and Isotridecyloxypropyl-1,3-diaminopropane.
50. The process of claim 44, wherein the amount of amine is between about 0.05 and about 5.0 weight percent on weight of the article.

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51. The process of claim 44, wherein the amount of amine is between about 0.1 and about 1.0 weight percent on weight of the article.
52. The process of claim 44, wherein the amount of amine is between about 0.2 and about 0.7 weight percent on weight of the article.
53. The process of claim 44, wherein the amine is applied uniformly to the surface of the article.
54. The product of the process of claim 44.

Claims 55-59 (Cancelled)

60. A process for chemically modifying a hydrolizable polymer-containing textile article to improve resistance to pilling by:
- (a) Applying an effective amount of a branched chain amine to the surface of the article, wherein the branched chain amine is selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines, and wherein the amine contains between 8 and 14 carbon atoms;
  - (b) Heating the article to a temperature between about 200 and 300 degrees F;
  - (c) Maintaining the temperature from between about 5 and 60 minutes;
  - (d) Cooling the article to a temperature between about 120 and 180 degrees F;
  - (e) Rinsing the article with water and an acidic solution; and
  - (f) Optionally, dyeing the article.

Claims 61 and 62 (Cancelled)

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63. The process of claim 60, wherein the amine is a polyamine.
64. The process of claim 60, wherein the amine is a diamine.
65. The process of claim 60, wherein the alkyl amine is selected from the group consisting of Isodecyloxypropyl-1,3-diaminopropane, Isododecyloxypropyl-1,3-diaminopropane and Isotridacyloxypropyl-1,3-diaminopropane.
66. The process of claim 60 wherein the amount of amine is between about 0.05 and about 5.0 weight percent on weight of the article.
67. The process of claim 60, wherein the amount of amine is between about 0.2 and about 0.7 weight percent of the article.
68. The process of claim 60, wherein the amount of amine is between about 0.2 and about 0.7 weight percent of the article.
69. The process of claim 60, wherein the amine is applied uniformly to the surface of the article.
70. The product of the process of claim 60.

Claims 71-75 (Cancelled)

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76. A process for chemically modifying a hydrolizable polymer-containing textile article to improve the resistance to pilling comprised of the steps of:
- (a) Applying an effective amount of a branched chain amine to the surface of the article, wherein the branched chain amine is selected from the group consisting of aliphatic amines, alkyl amines, and aliphatic substituted cyclic amines, and wherein the amine contains between 8 and 14 carbon atoms;
  - (b) Heating the article to a temperature between about 200 and 425 degrees F;
  - (c) Maintaining the temperature from between about 1 and 60 minutes;
  - (d) Optionally, rinsing the article with water; and
  - (e) Optionally, dyeing the article.

Claims 77 and 78 (Cancelled)

79. The process of claim 76, wherein the amine is a polyamine.
80. The process of claim 76, wherein the amine is diamine.
81. The process of claim 76, wherein the alkyl amine is selected from the group consisting of Isodecyloxypropyl-1,3-diaminopropane, Isododecyloxypropyl-1,3-diaminopropane and Isotridecyloxypropyl-1,3-diaminopropane.
82. The process of claim 76, wherein the amount of amine is between about 0.05 and about 5.0 weight percent on weight of the article.
83. The process of claim 76, wherein the amount of amine is between about 0.1 and about 1.0 weight percent on weight of the article.

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84. The process of claim 76, wherein the amount of amine is between about 0.2 and about 0.7 weight percent of the article.
85. The process of claim 76, wherein the amine is uniformly applied to the surface of the article.
86. The product of the process of claim 76.

Claims 87-109 (Cancelled)

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**IX. EVIDENCE APPENDIX**

NONE.

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**X. RELATED PROCEEDINGS APPENDIX**

NONE.